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FACTORS GOVERNING RETENTION IN COLLEGE.

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INTELLIGENCE, SEX, AND AT LEAST TWO YEARS OF HIGH SCHOOL FOREIGN LANGUAGE STUDY ARE EXAMINED AS FACTORS IN COLLEGE PERSISTENCE. STUDIES OF ACADEMIC SUSPENSIONS AND WITHDRAWALS AFTER THE FRESHMAN YEAR AT ALABAMA POLYTECHNIC INSTITUTE REVEAL THAT (1) THERE IS A HIGH DEGREE OF CORRELATION BETWEEN INTELLIGENCE AND COLLEGE PERSISTENCE, (2) WOMEN ARE SIGNIFICANTLY MORE PERSISTENT THAN MEN, AND (3) STUDENTS WHO PRESENT TWO YEARS OF HIGH SCHOOL FOREIGN LANGUAGE STUDY HAVE TWICE THE CHANCE OF SURVIVING THE FRESHMAN YEAR AS THOSE WHO DO NOT. WHILE STUDENTS SO PREPARED IN FOREIGN LANGUAGE SHOW MORE PERSISTENCE IN ALL LEVELS OF INTELLIGENCE, SUCH PREPARATION IS ESPECIALLY ADVANTAGEOUS TO THOSE IN THE LOWER INTELLIGENCE RANGES. LITERATURE ON THE CORRELATION OF COLLEGE PERSISTENCE WITH OTHER SUBJECT FIELDS DOES NOT REVEAL ANY SUCH RELATION FOR THOSE FIELDS. THIS ARTICLE IS A REPRINT FROM "THE MODERN LANGUAGE JOURNAL," VOLUME 43, NUMBER 3, MARCH 1959, PAGES 143-146. (AF)

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Factors Governing Retention in College

PROGNOSES[1] of college success generally depend on standardized test scores,[2] high-school class standing,[3] or some combination of the two. This study will indicate two other considerations which figure in the problem, namely, sex and previous foreign language study.

Freshmen entering the Alabama Polytechnic Institute are subjected to a psychological test which renders two measurements of intelligence, a "Q" score and an "L" score. The former (problem solving) more closely reflects *innate* intelligence, the latter (linguistic ability), *acquired* intelligence. Obviously, however, the two concepts can never be perfectly differentiated; innate intelligence can hardly be tested without language, and linguistic ability is one of the reflections of general intelligence. As the Educational Policies Commission of the NEA and the AASA states:

"Several other specialized abilities—such as . . . oratory, poetry . . . and linguistics—are popularly thought to be manifestations of special gifts. But psychologists usually regard them as functions of general intelligence channeled into specific areas by environmental circumstances . . . and training."[4] Linguistic scientists and anthropologists concur: *Language is acquired, not innate.*

Freshmen matriculating at A.P.I. in September of 1955 and 1956 included 1073 who presented the recommended minimum of two years foreign language study and 1965 without such preparation. The total of 3038 included 2369 men and 669 women. Of the total number, 438 were placed on "dropped status" (academic suspension) at the end of the first year. An additional 517 withdrew voluntarily during this period. These "dropped" and "withdrew" constitute the basis for this study.

We observe in Table 1 the relationship of

[1] This study is an extension of "High-School Foreign Language Study and College Performance," *School and Society* (June 8, 1957); reprinted in *Modern Language Journal* (January, 1958).

[2] E.g., George Smith, *Who Would Be Eliminated?* Kansas Studies in Education, Lawrence (December, 1956).

[3] E.g., Paul F. Munger, "Can We Really Predict Who Will Graduate From College?" *College and University* (Winter, 1957).

Class standing at graduation was not indicated on many of the freshmen involved in this study thereby precluding consideration of this aspect.

[4] *Identification of the Gifted*, Ch. 3.

TABLE 1

"Q" decile	10	9	8	7	6	5	4	3	2	1
Dropped	3.1	4.5	8.7	9.9	14.9	14.0	16.8	18.2	20.7	29.5
Withdrew	8.9	12.2	12.4	13.3	16.7	15.9	13.9	19.5	21.0	33.1
Total	12.0	16.7	21.1	23.2	31.6	29.9	30.7	37.7	41.7	62.6

TABLE 2

"L" decile	10	9	8	7	6	5	4	3	2	1
Dropped	.4	4.1	9.2	7.8	13.6	13.0	15.3	22.8	20.5	37.0
Withdrew	10.0	14.7	11.1	13.4	16.6	16.0	20.1	19.2	22.4	25.8
Total	10.4	18.8	20.3	21.2	30.2	29.0	35.4	42.0	42.9	62.8

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TABLE 3

	Men		Women	
	Number	*Per Cent*	*Number*	*Per Cent*
Dropped	395	16.7	43	6.4
Withdrew	440	18.6	77	11.5
Total	835/2369	35.3	120/669	17.9

TABLE 4

	FL		Non-FL	
	Number	*Per Cent*	*Number*	*Per Cent*
Dropped	87	8.1	351	17.9
Withdrew	118	11.0	399	20.3
Total	205/1073	19.1	750/1965	38.2

TABLE 5

	Women		Men	
	FL	Non-FL	FL	Non-FL
Dropped	3.4%	10.4%	10.7%	19.1%
Withdrew	9.2%	14.6%	12.0%	21.3%
Total	12.6%	25.0%	22.7%	40.4%

TABLE 6

"Q" decile	10	9	8	7	6	5	4	3	2	1
Non-FL	14.3	22.6	26.5	31.2	40.8	32.3	42.0	46.8	51.1	64.4
FL	9.7	9.7	16.3	20.9	24.0	13.9	22.2	23.3	27.9	33.3
Difference	4.6	12.9	10.2	10.3	16.8	18.4	19.8	23.5	23.2	31.1

TABLE 7

"L" decile	10	9	8	7	6	5	4	3	2	1
Non-FL	15.6	25.1	22.5	24.3	32.0	35.7	39.8	46.3	45.7	64.1
FL	6.8	13.9	17.4	17.2	24.8	17.1	25.0	29.0	31.3	45.5
Difference	8.8	11.2	5.1	7.1	7.2	18.6	14.8	17.3	14.4	18.6

TABLE 8

Level	Upper		Middle		Lower	
Non-FL	20.8%	(91/438)	32.8%	(249/759)	53.4%	(410/768)
FL	11.6%	(43/372)	20.7%	(87/420)	26.7%	(75/281)
Difference	9.2%		12.1%		26.7%	

TABLE 9

Level	Upper		Middle		Lower	
Non-FL	21.6%	(86/398)	33.2%	(271/816)	52.3%	(393/751)
FL	12.4%	(55/443)	20.9%	(98/468)	32.1%	(52/162)
Difference	9.2%		12.3%		20.2%	

"Q" decile to academic mortality. The figures represent the percentage of the original number at each decile to appear on the casualty lists. Thus, at the top decile by "Q," 3.1% of the group were dropped and an additional 8.9% withdrew. The total loss for the top decile was 12.0%.

We next observe in Table 2 the relationship of "L" decile to academic mortality. Thus, at the top decile by "L," .4% of the group were dropped and an additional 10.0% withdrew. The total loss for the top decile was 10.4%.

This aspect of the study establishes: 1) There is a high degree of correlation between intelligence—whether innate or acquired—and persistency in college. 2) Although other factors were certainly operative (marriage, transfers, finances, etc.), the correlation between withdrawals and intelligence makes it obvious that intellectual ability—or lack thereof—was a significant factor for those failing to complete the first year. 3) The "Q" score, whether more reliable or less reliable an index than the "L" score, is nevertheless a predictor of success in college.

The second consideration deals with sex differences. The women, although averaging slightly lower on "Q" (slightly higher on "L") than the men, surpassed the latter to a considerable degree as regards persistency during the first year of college as is indicated by Table 3. Thus, 835 of the 2369 men, or 35.3%, failed to complete the year satisfactorily.

These data acquire even greater significance against the background of Northby's study[5] which indicates that the upper half of a typical high-school graduating class is composed of three-fifths girls and only two-fifths boys. If all these were to matriculate in college, the women, comprising sixty per cent to begin with, would show an attrition of some eighteen per cent. The men, comprising only forty per cent at the onset, would show an attrition rate of almost double that of the women. Schools, such as Auburn, which limit out-of-state enrollment to the upper half of the high-school graduating class might well take these facts into consideration.

The third consideration deals with high-school foreign language study. Table 4 compares the FL with the Non-FL group.

A student's chances, thus, of surviving the first year of college are doubled if he presents two years of foreign language study. We have previously seen, however, that the women have approximately the same advantage over the men as the FL students have over the Non-FL. And since the FL group contains a larger percentage of women (35.6%) than the Non-FL (14.6%), the sexes must be compared separately according to foreign language background, as in Table 5.

It will be observed that the 2:1 ratio prevailing in Tables 3 and 4 remains essentially unchanged. The FL women show the least loss, with the FL men, the Non-FL women, and the Non-FL men following in that order.

We have seen that intelligence is a factor in this matter of persistency. It is, hence, necessary to compare the total losses (dropped and withdrew) of the two groups by "Q" decile. Table 6 makes this comparison.

The same general correlation between "Q" decile and academic mortality is to be observed for both the FL and the Non-FL groups. It should also be noticed that *at the same level of intelligence* the comparison favors the FL students. The average (unweighted) loss per decile for the Non-FL is 37.2%, that of the FL group, 20.1%—slightly more than one-half. The progression of the difference should be noted in passing: The phenomenon will receive subsequent consideration.

The picture does not change appreciably when the FL and the Non-FL groups are compared according to "L" decile as we see in Table 7.

The same correlation and the same FL advantage indicated in Table 6 is to be noted in Table 7. The average (unweighted) loss per decile for the Non-FL is 35.1%, that of the FL, 22.8%.

The significance of the FL advantage revealed by Table 7 has, however, much greater implication than that indicated by Table 6. In the basic study[1] it was established that the two year FL averaged two deciles higher in linguistic ability than the Non-FL (67.1 to 46.9) as a result of superior linguistic background—increased vocabulary, understanding of word and thought relationships, definitions, etc. Now, if superior linguistic ability were the *only*

[5] Arwood S. Northby, "Sex Differences in High-School Scholarship," *School and Society* (February 1, 1958).

factor involved, a comparison between the two groups on the basis of "L" decile should cancel out the advantage of the FL group. The fact that the latter *still* retains an advantage indicates the existence of an additional consideration—probably the concept of mental discipline so frequently attacked by the life-adjusters. There can, of course, be no serious doubt that time devoted to a discipline requiring effort, perseverance, and attention to detail provides a sounder basis for the intellectual demands of college than does a program requiring no mental effort but only attendance. It may be significant that the FL, although surpassing the Non-FL by only two deciles in linguistic ability in the original study, had an advantage of four deciles on Fall Quarter honor-point averages.

In Tables 6 and 7, it was observed that the difference in favor of the FL students at all levels of intelligence became more pronounced in the lower ranges. This fact enables us to seek conclusions regarding the value of FL preparation relative to intelligence level.

The entire group was divided, hence, into an *upper* level (deciles 10, 9, and 8), a *middle* level (deciles 7, 6, 5, and 4), and a *lower* level (deciles 3, 2, and 1) on the basis of "Q" score. Each level was then separated into FL and Non-FL groups, and percentages of loss, according to original number by level and group, were calculated. Table 8 presents the results.

Thus, 20.8%, or 91 of the 438, of the Non-FL who scored in the upper three deciles failed to complete the first year of college satisfactorily.

The procedure was repeated using the "L" scores. The results, as shown in Table 9, were almost identical.

It is concluded that FL preparation is advantageous for the upper levels of intelligence, more so for the middle ranges, but especially profitable for those in the lower brackets. Reason would bear out such conclusion; the more intelligent, possessing greater adaptability, are better able to overcome a disadvantage than are those less favorably endowed. This is, of course, in reference to the college freshman level, not to that of the general population.

This predictive value, moreover, seems to be restricted to FL study alone among all academic courses. Nelson found a significant correlation between college success and number of high-school units presented for foreign language only. Mathematics and science showed an insignificant correlation and all other subjects a negative correlation.[6] And the Allerton House Conference on Education states, "The study revealed that drop-out students and graduating seniors presented an almost identical number of entrance units in English, social studies, mathematics and science. Only in foreign language was there an appreciable difference."[7]

Which language is most advantageous? The evidence is scanty and conflicting, but the children of this writer, a modern language teacher, study Latin through the fifth and sixth grades as a foundation for subsequent study of —among other academic subjects—a modern foreign language.

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[6] *School and Society* (February 25, 1933).
[7] *Relation of the Program of Studies to College Success* (Carbondale, Ill. April 17, 1958).

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